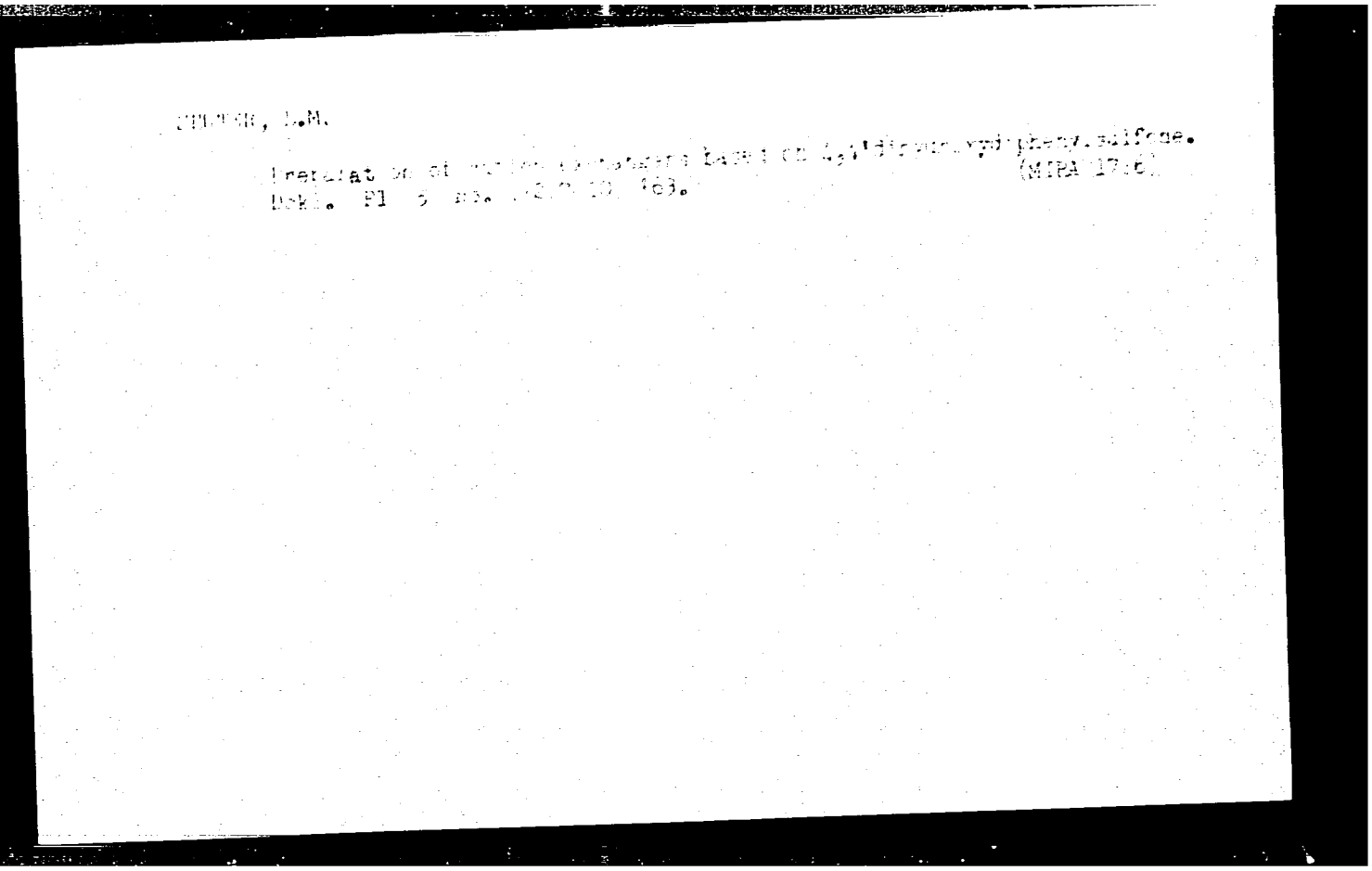
BERKMAN, Ya.P.; SHUTER, L.M.; TRAKHTENBERG, S.I.

New protein acrylate film-forming agents for dye coating of leather. Kozh.obuv.prom. 4 no.1:20-23 Ja '62. (MIRA 15:3)
(Films (Chemistry)) (Dyes and dyeing--Leather)

YAREMCHUK, N.A.; SHUTER, L.M.; BERKMAN, Ya.P.

Amphoteric "LAF" tanner made from extractive phenols.
Kozh.-obuv. prom. 4 no.7:28-29 Jl '62. (MIRA 17:1)



SHUTEN', L.M.; TRAKHTENBERG, S.I.

Synthesis of casein-acrylate film-forming materials for the surface dyeing of leather. Dokl. LPI 5 no. 1/2:25-28 '63. (MIRA 17:6)

YAREMCHUK, N.A.; SHTER, L.M.; FERMAN, Ya. F.

Obtaining cationic and amphoteric water-soluble condensation products of amines and phenols with dimethylolurea. Dokl. LPI 5 no. 1/2:[illegible]-[illegible] '63. (MIRA 17:6)

TRAKHTENBERG, S.I.; SHUTER, L.M.; STEPANCHENKO, N.A. [Stepanchenko, M.A.]
SHTERN, A.A.; ZHURAVSKIY, V.A. [Zhuravs'kyi, V.A.]; KAPLAN, K.L.

Preparation of the modified MBK-258 casein and its use in the treatment of chrome leather. Leh. prom. no.1:46-48 Ja-Mr '65.
(MIRA 18:4)

L 15037-66 EWT(m)/EWP(j)/T/ETC(m)-6 WW/RM

ACC NR: AP6003951 SOURCE CODE: UR/0374/65/000/005/0145/0148

AUTHOR: Berlin, A. A. (L'vov); Shuter, L. M. (L'vov)

ORG: none

61
B

TITLE: Determination of the flow temperature of polymers 7,44,55

SOURCE: Mekhanika polimerov, no. 5, 1965, 145-148

TOPIC TAGS: polymer, polyethylene plastic, polyamide, temperature sensitive element, temperature dependence, transition flow

ABSTRACT: A device for the direct determination of polymer flow temperature has been developed. It excludes the necessity of observation of the transition moment of the polymer to the flowing state. The method of flow point determination by the device described above provides reproducible data over a wide range of film thickness and pressure stresses, and ensures also good conformity of results obtained with the literature data. The possibility of determining the nature of the value of the transition temperature of the polymer to the flowing state by means of temperature dependent curves of the transition time is shown. Orig. art. has: 3 figures and 2 tables. [Based on author's abstract]

SUB CODE: 11 SUBM DATE: 26Apr65/ ORIG REF: 007/ OTH REF: 003/

GC

Card 1/1 UDC: 678.01.53

2

L 44592-66 EWT(m)/EWP(j)/T IJP(c) RM

ACC NR: AP6013275 (A) SOURCE CODE: UR/0413/66/000/008/0078/0078

INVENTOR: Berlin, A. A.; Berkman, Ya. P.; Shuter, L. M.

ORG: none

TITLE: Method of obtaining graft copolymers of carboxymethylcellulose and unsaturated monomers. Class 39, No. 180791

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 8, 1966, 78

TOPIC TAGS: copolymer, monomer, copolymerization, polymerization initiator, graft copolymer

ABSTRACT: An Author Certificate has been issued for a method of obtaining graft copolymers of carboxymethylcellulose and unsaturated monomers in the presence of initiators of graft copolymerization reaction in a hydrogen medium. To obtain water-insoluble, film-forming products, carboxymethylcellulose is subjected to preliminary treatment with water-soluble peroxide compounds. The treatment of carboxymethylcellulose by

UDC: 678.546.11.9-416:678.744.325

Card 1/2

ALEKSANDROV, G.P.; SHUTER, Ya.N.

Volumetric determination of potassium sulfate in natural potassium salts. Zav.lab.21 no.12:1432-1433 '55. (MLRA 9:4)

1.Institut geologii poleznykh iskopayemykh Akademii nauk USSR.
(Potassium sulfates--Analysis) (Volumetric analysis)

ALEKSANDROV, G.P.; SHUTER, Ya.N.; SHEVCHENKO, Yu.V.

Volumetric determination of cobalt by means of potassium permanganate. Ukr. khim. zhur. 28 no.7:871-874 '62. (MIRA 15:12)

1. Institut geologii poleznykh iskopayemykh.
(Cobalt—Analysis) (Potassium permanganate)

SHUTEYEV, Mikhail Fedorovich; NOSOVETS, Fedor Gerasimovich; GOLOD, O.V., red.; TYURYAYEV, M.A., tekhn. red.

[Experience in cultivating the opium poppy] Opyt vozdelyvaniia opiinogo maka. Frunze, Kirgizskoe gos. izd-vo, 1961. 43 p. (MIRA 15:3)

(Poppy)

SHUTEYEV, N. (g. Orel)

Production of wall blocks based on vibrator milled materials.
Prom.koop. no.1:22-23 Ja '57. (MIRA 10:4)

1. Starshiy inzhener proizvodstvennogo otdela Orlovskogo oblpromsoveta.
(Building blocks) (Milling machinery)

YUGOSLAVIA/Chemical Technology. Chemical Products and Their Application, Part 3. - Food Industry. H

Abs Jour: Referat. Zhurnal Khimiya, No 21, 1958, 72301.

Author : Marija Shutich.
Inst :
Title : Use of Pure Cultures in Milk Industry.

Orig Pub: Mljekarstvo, 1958, 8, No 2, 35-36.

Abstract: No abstract.

Card : 1/1

VORONTSOV, Yu.; GARMAZ, V., elektrik; SHUTIK, I.; PRESMAN, B.; ZHIVILIN, P.

If we take the task seriously. Izobr.i rats. no.7:34-36 Jl '60.
(MIRA 13:8)

1. Chleny reydovoy brigady Minskogo kamvol'nogo kombinata.
2. Nachal'nik rovnichnogo tsekha Minskogo kamvol'nogo kombinata (for Vorontsov). 3. Sotrudnik mnogotirazhki "Za kommunisticheskiy trud" (for Shutik). 4. Sotrudnik zhurnala "Izobretatel' i ratsionalizator" (for Zhivilin).
(Minsk--Textile industry)

SHUTIKOV, N.M., direktor.

Year-round burning of bricks in plants for seasonal molding. Gor.khos.Mosk. 27 no.10:26-28 O '53. (MLRA 6:11)

1. Verkhnekotel'skiy kirpichnyy zavod. (Moscow--Brick industry)

SHUTIKOVA, L.A.; CHERKAYEV, V.G.

β-Methylation of alcohols. Report No.1: Preparation of hydratropic and 2-methyl-2-cyclohexylethyl alcohols. Trudy VNIISNDV no.6:37-45 '63. (MIRA 17:4)

KRZHEMINSKIY, S.A., kand.tekhn.nauk; KAMEYKO, V.A., kand.tekhn.nauk; KRYZHANOVSKIY, B.B., inzh.; LEVIN, M.I., kand.tekhn.nauk; SHUTILO, L.I., inzh.

Technology and basic physical and mechanical properties of autoclaved air-entrained silicate. Sbor. trud. ROSNIIMS no.17:109-129 '60. (MIRA 14:12)

(Sand-lime products)

KRZHEMINSKIY, S.A., kand.tekhn.nauk; KRYZHANOVSKIY, B.B., inzh.; KAMEYKO, V.A., kand.tekhn.nauk; LEVIN, N.I., kand.tekhn.nauk; BALASHOVA, N.M., inzh.; SHUTILO, L.I., inzh.

The technology and basic physicomechanical properties of air-entrained silicate and air-entrained cinder silicate used as insulating materials. Sbor. trud. ROSNIIMS no.20:36-51 '61. (MIRA 16:1)

(Insulating materials) (Sand-lime products)

Category: USSR / Physical Chemistry - Solutions. Theory of acids and base. B-11

Abs Jour: Referat Zhur-Khimiya, No 9, 1957, 30093

Author : Mikhaylov I. G., Shutilov V. A.
Inst : Leningrad University. Academy of Sciences USSR.
Title : Sound Velocity and Compressibility of Aqueous Solutions of Inorganic Acids

Orig Pub: Vestn. Leningr. un-ta, 1956, No 16, 16-28. Dokl. AN SSSR, 1956, 110, No 1, 116-118

Abstract: Interferometric determinations were made of the velocity of ultrasound (frequency 6 megahertz) in aqueous solution of H_2SO_4 (4.2 - 91.3%), HCl (4.9 - 27.0%) at 15-100°, and of HNO_3 (14.5 - 61.0%) at 20-90°. Densities of solutions, in the same temperature ranges, were measured pycnometrically (with an accuracy of 0.0001 g/cm^3). Sound velocities in the solutions under study have a temperature (I) and a concentration (II) maximum. I -- disappears at concentration of the acid of about 30% and higher, II -- levels off with rise in temperature. In solutions of H_2SO_4, a minimum of sound velocity is

Card : 1/2 -1-

Category: USSR / Physical Chemistry - Solutions. Theory of acids and base. B-11

Abs Jour: Referat Zhur-Khimiya, No 9, 1957, 30093

observed at a concentration of 4-5%, which disappears on increase of the temperature, which is associated with hydration of the molecules of H_2SO_4. The absence of a sound velocity maximum in solution of HNO_3 is explained by the difference in degree of dissociation and in the structure of NO_3^- and SO_4^{2-} anions. The dependence of compressibility (β) of the acid solutions on the concentration (c) is different from that found in solutions of salts: $(\beta - \beta_0)/c$ is not a linear function of $\sqrt{c}$ (β_0 -- compressibility of water). It is shown that addition of water or of the acid increases the compressibility of the mixture. Temperature and concentration dependencies of the sound velocity make it possible to elucidate the effect of different ions on the structure of water. In solutions of HNO of primary importance is the effect of protons upon the structure of water. In solutions of HCl the Cl^- ion has a loosening effect on the structure of water and compensates, in part, the effect of the proton.

Card : 2/2 -2-

MIKHAYLOV, I.G.; SHUTILOV, V.A.

Velocity of sound and the compressibility of aqueous solutions of inorganic acids. Dokl.AN SSSR 110 no.1:116-118 S-O '56. (MLRA 9:11)

1. Leningradskiy gosudarstvennyy universitet imeni A.A.Zhdanova. Predstavleno akademikom I.I.Chernyayevym.
(Acids, Inorganic) (Sound--Speed)

SHUTILOV, V.A.

46-2-20/23

AUTHOR: Mikhaylov, I.G. and Shutilov, V.A.

TITLE: The diffraction of light by ultrasonic waves of large amplitude. (Diffraktsiya sveta na ultrazvukovykh volnakh bol'shoy amplitudy) (Letters to the Editor)

PERIODICAL: "Akusticheskiy Zhurnal" (Journal of Acoustics), 1957, Vol.3, No.2, pp. 203-204 (U.S.S.R.)

ABSTRACT: A series of photographs of light spectra in liquids, subjected to various sound intensities and at different distances between the quartz and the light beam intersecting the ultrasonic field, were taken in an endeavour to establish the law, governing the asymmetry of the diffraction spectrum when large amplitude ultrasonic waves are present in the liquid. The description of the measuring arrangement is given. It is thought that the observed asymmetry is the result of distortion of the ultrasonic waveform, due to the presence of shock-waves. The existence of the latter in liquids has been experimentally established by Zarembo et al. (4) and subsequently confirmed by Fox and Wallace (5), (6). Following calculations of Biguard (7), the authors have satisfied for the conditions of the shock-waves initiation. They also mention that within the range of the sound intensities used, the ultra-sound velocity remained constant (within the experimental error of approx.

Card 1/2

SHUTILOV, V.A.

46-4-17/17

AUTHORS: Mikhaylov, I.G. and Shutilov, V.A.

TITLE: An Apparatus for Measuring the Absolute Intensity of Ultrasound (Pribor dlya izmereniya absolyutnoy intensivnosti ul'trazvuka)

PERIODICAL: Akusticheskiy Zhurnal, 1957, Vol.III, Nr 4, pp.379-380 (USSR)

ABSTRACT: The apparatus consists (cf.Fig.) of a dewar vessel, 1, which is filled with a working substance, 2. The vessel is covered with a ground glass cap, 3, having a thin window (0.4 mm), 4. Sound waves enter the vessel through this window and are absorbed by the working substance. In order to prevent reflections from the bottom of the vessel, the latter is made in the form of a horn the end of which is filled with glass wool. The beam entering the device is defined by the truncated conical reflector, 7. The probe is attached to the rod, 8, which serves as a holder. When the sound waves enter the dewar they are absorbed and thus warm up the working substance which expands through the

Card 1/2

46-4-17/17

An Apparatus for Measuring the Absolute Intensity of Ultrasound.

capillary, C. The level of the liquid in the capillary can be measured, and the rate at which it rises is a measure of the intensity of ultrasound. By altering the diameter of the capillary different sensitivities can be obtained. Intensities between 0.05 W/cm^2 and 50 W/cm^2 at 573 Kc/s have been measured with an accuracy of 10%. There is 1 figure.

ASSOCIATION: Leningrad State University (Leningradskiy gosudarstvennyy universitet)

SUBMITTED: May 4, 1957.

AVAILABLE: Library of Congress.

Card 2/2 1. Ultrasound intensity-Measurement

MEDVAYEV, I. G. and SHUTILOV, V. A.

"Optical Investigations of Ultrasonic Waves of Finite Amplitude in Liquids."

paper presented at the 4th All-Union Conf. on Acoustics, Moscow, 25 May - 2 Jun 58.

AUTHORS: Mikhaylov, I.G. and Shutilov, V.A. 46-4-2-10/20

TITLE: Diffraction of Light on Ultrasonic Waves of Large Amplitude (Difraktsiya sveta na ul'trazvukovykh volnakh bol'shoy amplitudy)

PERIODICAL: Akusticheskiy Zhurnal, 1958, Vol IV, Nr 2, pp. 174-183 (USSR)

ABSTRACT: The present authors reported earlier (Ref 1) that on transmission of a light beam through a liquid layer, in which ultrasonic vibrations of large amplitude were excited, a diffractional image with asymmetrical distribution of the diffractional maxima was observed. It was also reported that with increase of distance between the sound source and the light beam, this asymmetry increases. Fig 1 repeats in qualitative form the results obtained in Ref 1 by giving the distribution of intensity in diffractional maxima for three distances between the sound source and light beam (7, 25, 65 cm respectively) and for various values of the sound intensity. The curves in Fig 1 are envelopes of microphotograms of maxima with the highest intensities, as shown in Fig 1, 1. All curves have, in general, two maxima which are resolved only at sufficiently high acoustic sound intensities. Fig 2 shows photographs of diffractional images corresponding to curves of Fig 1.

Card 1/3

Diffraction of Light on Ultrasonic Waves of Large Amplitude 46-4-2-10/20

These photographs and curves illustrate diffraction of light on ultrasound of 573 kc/s frequency (0.26 cm wavelength) and up to 15 W/cm^2 intensity at a depth of 2 cm in distilled water. The present paper deals with the interpretation of the diffractional image asymmetry. The authors suggest that the cause of this asymmetry lies in the distortion of the sinusoidal form of sound wave at large acoustic intensities. The sinusoidal wave is assumed to be distorted into saw-tooth form at high ultrasound intensities. Calculations assuming saw-toothed wave are in good qualitative agreement with the experimental data on the distribution of light in diffractional images obtained earlier by the authors. These calculations took into account only the phase modulation of light, excluding the amplitude modulation. This does not mean, however, that the latter is absent and in general modulation should be regarded as mixed, i.e. amplitude and phase modulation present together.
The authors thank S.M. Rytov for his advice. There are 6 figures

Card 2/3

46-4-2-10/20

Diffraction of Light on Ultrasonic Waves of Large Amplitude

and 10 references, 3 of which are Soviet, 2 German, 1 Swiss, 1 American, 1 English, 1 French and 1 translation of Western work into Russian.

ASSOCIATION: Leningradskiy Gosudarstvennyy Universitet (Leningrad State University)

SUBMITTED: May 4, 1957

Card 3/3 1. Sound—Distortion 2. Light—Refraction 3. Ultrasonic waves —Applications

SHUTILOV, V. A.: Master Phys-Math Sci (diss) -- "Optical investigations of ultrasonic waves of large amplitude in liquids". Leningrad, 1959. 13 pp (Leningrad Order of Lenin State U im A. A. Zhdanov), 150 copies (KL, No 8, 1959, 134)

PHASE I BOOK EXPLOITATION SOV/4562

Shutilov, Vladimir Aleksandrovich

Sposoby izmereniy absolyutnoy intensivnosti ul'trazvuka; iz opyta Gosudarstvennogo universiteta imeni A.A. Zhdanova (Methods of Measuring the Absolute Intensity of Ultrasonics [Based on] Experimental Work of the State University imeni A.A. Zhdanov) Leningrad, Leningr. dom nauchno-tekhn. propagandy, 1959. 23 p. (Series: Leningradskiy dom nauchno-tekhnicheskoy propagandy. Obmen peredovym opytom. Seriya: Elektricheskiye metody obrabotki metallov, vyp. 3) 6,500 copies printed.

Sponsoring Agencies: Obshchestvo po rasprostraneniyu politicheskikh i nauchnykh znaniy RSFSR; Leningradskiy dom nauchno-tekhnicheskoy propagandy.

Ed.: Sh. D. Achkinadze, Engineer; Tech. Ed.: V.L. Gvirts.

PURPOSE: This booklet is intended for technicians working in the field of ultrasonics.

COVERAGE: The booklet, published under the auspices of the Society for the Propagation of Political and Scientific Information, is the third in a series on

Card 1/2

electrical methods of processing metals. The author briefly analyzes the basic principles underlying the ultrasonic activation of substances, and discusses the optical, mechanical, and calorimetric methods of measuring ultrasonic intensity. A calorimetric device based on the measurement of the thermal expansion of liquids is described in detail. No personalities are mentioned. There are 10 references: 7 Soviet, 2 English and 1 German.

TABLE OF CONTENTS:

AVAILABLE: Library of Congress

JA/dwm/gmp
12-20-60

67472
SOV/146-2-4-16/19

(24,1800

AUTHOR: Mikhaylov, I.G., Shutilov, V.A.

TITLE: New Calorimeter Method for Measuring the Absolute Intensity of Ultra-Sound.

PERIODICAL: Isvestiya vysshikh uchebnykh zavedeniy. Priborostroyeniye, 1959, Nr 4, pp 130-136 (USSR)

ABSTRACT: A description is given of the development and testing of a small-scale instrument (Figures 1,2) for measuring the absolute intensity of ultra-sound with high accuracy (6-7%). The device consists of a horn-shaped glass-vessel with thin double walls (Dewar vessel) with an interior volume of approximately 100 cm^3, containing a calorimetric working liquid (degasified olive oil) with a high ultra-sound damping coefficient. The working principle consists in measuring the heat expansion of the calorimetric liquid

Card 1/3

New Calorimeter Method for Measuring the Absolute Intensity of Ultra-Sound

and not the temperature increase as done by other less accurate methods /Reference 1,2,3,4/. As an example, the results of intensity measurements with distilled water at 580 ultra-sound cycles, different distances from the radiator, and a sound velocity of 3824 m/second are shown in a graph (Figure 4). The instrument has the following disadvantages: 1) a rather complicated design, and 2) a relatively long cooling time of the calorimetric liquid. This disadvantage can be eliminated by using thermo-electric cooling which would not only speed up the intensity measurements but also raise the temperature of the working liquid to that of the ambient medium at the beginning of the measurements. The authors thank G.N. Matveyev for the skillful construction of instrument models. This

SOV/46-5-1-12/24

AUTHORS: Mikhaylov, I.G. and Shutilov, V.A.

TITLE: Diffraction of Light on Harmonics of an Ultrasonic Wave Distorted in the Process of Propagation in a Liquid (Difraktsiya sveta na garmonikakh ul'trazvukovoy volny, iskazhennoy v protsesse rasprostraneniya v zhidkosti)

PERIODICAL: Akusticheskiy Zhurnal, 1959, Vol 5, Nr 1, pp 77-79 + 1 plate (USSR)

ABSTRACT: This paper was presented at the IV-th All-Union Conference on Acoustics held in Moscow in May 1958. Distortion of ultrasonic waves of finite amplitude on propagation in a liquid is equivalent to appearance of second and higher harmonics, which can be observed by means of the usual optical diffraction apparatus. The apparatus used by the authors is shown in Fig 1. A quartz plate Q was excited by means of a valve (tube) oscillator at 583 kc/s. The quartz radiator was placed in a bath filled with tap water and fitted with glass windows. The optical system consisted of a monochromatic source S, a slit Sh, lenses K, O_1, O_2 and total-internal-reflection prisms P_1 and P_2. To separate out a particular harmonic an acoustical filter F was used which was transparent to that harmonic and opaque to other harmonics and to the fundamental frequency. The filters were in the form of plane-parallel

Card 1/3

Diffraction of Light on Harmonics of an Ultrasonic Wave Distorted in the Process of Propagation in a Liquid

plates made of heavy flint glass, of thicknesses equal to a whole number of half-waves of the second, third, fourth etc., harmonics. To avoid passage of ultrasonic waves around the filter, a conical rubber diaphragm was used. Fig 2 shows a series of photographs obtained with the ultrasonic source radiating 16.6 W/cm^2 (sound intensity was measured by means of a calorimetric device described earlier by the authors, Ref 5). Fig 2a is a diffraction pattern of the whole ultrasonic wave (fundamental and all harmonics) obtained without a filter. This diffraction pattern is strongly asymmetric because of the strong distortion of the wave. Figs 2б, 2в and 2г represent diffraction patterns of the second, third and fourth harmonics obtained with filters at a distance of 20 cm from the acoustic source. Fig 3 shows a similar series of diffraction patterns; photographs a, б, в, г, д represent the unfiltered wave (strongly asymmetric) and the second, third, fourth and fifth harmonics respectively. The asymmetry of Fig 3б is due to distortion of the second harmonic at large distances (50 cm from the source) and due to superposition of the second and fourth

Diffraction of Light on Harmonics of an Ultrasonic Wave Distorted in the Process of Propagation in a Liquid

harmonics, both of which were passed by the filter used. Similar diffraction patterns may be obtained using one glass plate as a reflection filter. This plate is then placed at certain definite angles with respect to the ultrasonic beam. Diffraction patterns obtained with reflection filters are less clear, as shown by Fig 4. There are 4 figures and 5 Soviet references.

ASSOCIATION: Leningradskiy gosudarstvennyy universitet (Leningrad State University)

SUBMITTED: June 11, 1958

SOV/46-5-2-17/34

AUTHOR: Shutilov, V.A.

TITLE: Optical Studies of the Form of Ultrasonic Waves of Large Amplitude in Liquids (Opticheskiye issledovaniya formy ul'trazvukovoy volny bol'shoy amplitudy v zhidkosti)

PERIODICAL: Akusticheskiy zhurnal, 1959, Vol 5, Nr 2, pp 231-240 (USSR)

ABSTRACT: The main results of the present paper were reported at the Fourth All-Union Conference on Acoustics, Moscow, May-June 1958. The author describes his studies of the distribution of ultrasonic waves of large amplitude propagated in low-viscosity liquids. Originally sinusoidal waves become approximately triangular or saw-tooth shaped (middle graph, Fig.1) as they are propagated in liquids. Assuming that the waves are exactly triangular, the parameters of the wave-form triangle may be deduced from the patterns of a light diffracted by the ultrasonic waves. The base angles of the triangle φ_1 and φ_2 (Fig.1, middle graph) are related to the orders of maximum brightness in the diffraction pattern m_1 and m_2 (Fig.1, lower graph) by

Optical Studies of the Form of Ultrasonic Waves of Large Amplitude in Liquids

$$m_1 \cong \Lambda\varphi_1/\lambda\,, \quad m_2 = -\Lambda\varphi_2/\lambda$$

where Λ is the period of the distorted ultrasonic wave (base of the wave-form triangle) and λ is the wavelength of the diffracted light. The value of Λ can be deduced from the distance between two diffraction orders, and the height of the triangle h may be found from the absolute intensity of sound in the plane passing through the axis of the light-beam (the light-beam is perpendicular to the direction of propagation of the ultrasonic wave). Only three of the four parameters φ_1, φ_2, h and Λ are required to find the form of the triangle, i.e. a diffraction pattern with only one maximum gives sufficient information. Fig.2 shows a photograph and a photometer record of a diffraction pattern with one maximum and the triangular ultrasonic wave-form deduced from this pattern. A similar analysis of a diffraction pattern with two maxima is shown in Fig.3. In further discussion the author introduces a distortion coefficient of the ultrasonic wave defined by

Optical Studies of the Form of Ultrasonic Waves of Large Amplitude in Liquids

$$\gamma = 2x_0/\Lambda ,$$

where x_0 is the segment of the wave-form triangle base, which increases from zero with increase of the asymmetry of the triangle (see Fig.4). The value of γ is plotted in Fig.5 against the distance D (in centimetres) from a 583 kc/s source in distilled water; curves 1-4 in Fig.5 represent the following intensities at the source: 22, 12, 4.6 and 1.2 W/cm^2 respectively. At low initial ultrasound intensities the distortion coefficient γ rises linearly with the distance D, suggesting that decay (damping) is practically absent. Strong decay (absorption) of the ultrasonic wave is observed at high initial intensities (curves 1 and 2). The author shows also that the absolute intensity I in the ultrasonic beam may be determined from the diffraction pattern, since

$$I = C'm^2 ,$$

Card 3/4 where C' is a constant, $m = 2m_1m_2/(m_1+m_2)$, m_1 and m_2

Optical Studies of the Form of Ultrasonic Waves of Large Amplitude in Liquids

are the orders of maximum brightnesses in the pattern. The absolute intensity so deduced for a point distant 5 cm from a quartz source is plotted in Fig.9 (circles) as a function of the voltage applied to the source; it agrees well with the calorimetric measurements of the absolute intensity represented by crosses (Fig.9). Acknowledgment is made to I.G. Mikhaylov who directed this work. There are 9 figures and 6 references, of which 4 are Soviet and 2 English.

ASSOCIATION: Leningradskiy gosudarstvennyy universitet (Leningrad State University)

SUBMITTED: July 22, 1958

SOV/46-5-3-23/32

10(4), 21(4)

AUTHORS: Mikhaylov, I.G. and Shutilov, V.A.

TITLE: On a Simple Method of Detection of Cavitation in Liquids (O prostom sposobe obnaruzheniya kavitatsii v zhidkostyakh)

PERIODICAL: Akusticheskiy zhurnal, 1959, Vol 5, Nr 3, pp 376-378 (USSR)

ABSTRACT: The authors describe a method of measuring the acoustic intensity level at which cavitation in a liquid begins (known as the cavitation threshold). The method is based on the fact that when cavitation begins a liquid expands suddently due to evolution of gas bubbles. If the liquid is outgassed, the sudden "cavitational expansion" is still observed; it is now due to appearance of cavitational voids. The instrument used is shown in Fig 1. A liquid was placed in a cylindrical copper cell (1) through an aperture (2). Windows (3) of the cell were acoustically transparent. The cavitational expansion was noted in a glass capillary (5) protected by a metal sleeve (6). The cell was immersed in a liquid through which an ultrasonic beam was directed along the cell axis. The ultrasonic intensities were measured calorimetrically (Ref 3). The results obtained for acetone, toluene, dioxane, dichloroethane, benzine, cyclohexane, ether, carbon tetrachloride, chloroform, benzene, distilled water, outgassed distilled water and various oils are listed in Table 1.

Card 1/2

On a Simple Method of Detection of Cavitation in Liquids

SOV/46-5-3-23/32

The cavitation thresholds at temperatures from 13.5 to 20.0°C occurred at intensity levels from 0.4 (acetone) to 10.3 (outgassed olive oil) W/cm^2. Since the beginning of the cavitational process is indefinite, the values quoted should be regarded only as fairly accurate (measured to within 15-20%) relative values of the cavitation threshold. Alternatively, these values may be thought of as the absolute thresholds of cavitation of a liquid in contact with a solid wall, such as the surface of a radiator. There are 2 figures, 1 table and 3 references, 2 of which are Soviet and 1 English.

ASSOCIATION: Leningradskiy gosudarstvennyy universitet (Leningrad State University)

SUBMITTED: July 22, 1958

Card 2/2

05740

S/046/60/006/003/015/017/XX
B013/B063

6.8000 (3201, 1099, 1162)

AUTHORS: Mikhaylov, I. G., Shutilov, V. A.

TITLE: Distortion of the Shape of an Ultrasonic Wave of Finite Amplitude in Various Liquids

PERIODICAL: Akusticheskiy zhurnal, 1960, Vol. 6, No. 3, pp. 340-346

TEXT: The present paper deals with the use of the optical method for the determination of distortions of an ultrasonic wave when measuring non-linear parameters of liquids. The authors give formulas for calculating the deformation rate of the front of a propagating wave of finite amplitude and for determining the coefficients of the non-linear equation of state for liquids, and also the results of measurement obtained for various liquids. Using formula (21),

$$\varepsilon = (\delta_2 + \delta_1/\delta_2 + \delta_1)\left[F \cdot L(n_0 - 1)/2D\right] \quad , \text{ and (5)}$$

$$\varepsilon = (B/A + 2)/2,$$

which serve for the calculation of ε and B/A on the basis of photometric data, these quantities were measured for several liquids at an ultrasonic frequency of 570 kilocycles within the intensity range of ~2 ÷ 10 w/cm^2

Card 1/2

BAL'TERMANTS, Genriyetta Borisovna; SHUTILOV, V.A., red.; GRIGOR'YEVA, I.S., red. izd-va; BELOGUROVA, I.A., tekhn. red.

[Ultrasonic methods of the analysis and checking of liquid media based on the data from Soviet and foreign literature] Ul'trazvukovye metody analiza i kontrolia zhidkikh sred po dannym otechestvennoi i zarubezhnoi literatury. Leningrad, 1962. 24 p. (Leningradskii dom nauchno-tekhnicheskoi propagandy. Obmen peredovym opytom. Seriia: Elektricheskie metody obrabotki materialov, no.2) (MIRA 15:6)
(Ultrasonic testing) (Liquids)

S/887/61/000/000/013/069
E194/E155

AUTHORS: Mikhaylov, I.G., and Shutilov, V.A.

TITLE: An instrument for measuring ultrasonic intensity. (A.c. no.119000, cl. 42g, 1_{01} (no.597325 of April 14, 1958))

SOURCE: Sbornik izobreteniy; ul'trazvuk i yego primeneniye. Kom. po delam izobr. i otkrytiy. Moscow, Tsentr. byuro tekhn. inform., 1961, 22

TEXT: The instrument for measuring ultrasonic intensity operates on the principle of heating a sound-absorbing liquid by ultrasonics. A special feature of the instrument is that in order to improve the accuracy of measurement and to extend the range of intensities measured, the liquid whose rate of heating is observed is in a capillary between two fixed scale divisions. The instrument accordingly contains a vacuum-heat-insulated glass vessel containing sound-absorbing liquid and having double walls (Fig.16), between which the pressure is 10^{-6} mm Hg. The vessel is horn-shaped to improve the absorption of the ultrasonic beam, which is received through a round glass plate. Replaceable capillary

Card 1/3

An instrument for measuring ... S/887/61/000/000/013/069
E194/E155

tubes of different internal diameter are introduced into the vessel through a glass neck. The rate of heating of the liquid in the capillary is read on a scale. A heating spiral is located within the vessel to calibrate the instrument in terms of ultrasonic power absorption. The accuracy of measurement and extension of range are achieved by using capillaries of various sections.
There is 1 figure.

[Abstractor's note: Complete translation.]

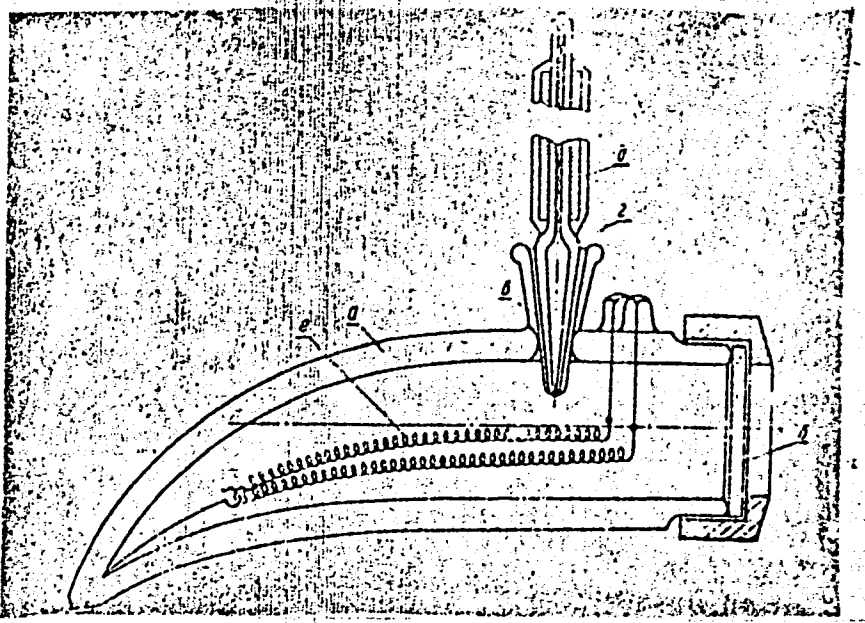
Fig.16. Instrument for measuring ultrasonic intensities.
а - glass vessel; б - plate; в - glass neck.
г - capillary tubes; д - scale; е - heater.

Card 2/3

An instrument for measuring ...

S/887/61/000/000/013/069
E194/E155

Fig. 16



Card 3/3

L 25360-65 EWT(1)/EWT(m)/EWP(k)/T RWH
ACCESSION NR: AP4046735 S/0054/64/000/003/0065/0083

AUTHOR: Manucharov, Yu. S.; Mikhaylov, I. G.; Shutilov, V. A.

TITLE: Effect of concentration and temperature on the sound velocity and on the compressibility of electrolytic solutions at various hydrostatic pressures

SOURCE: Leningrad. Universitet. Vestnik. Seriya fiziki i khimii, no. 3, 1964, 65-83

TOPIC TAGS: ultra sound velocity, electrolyte, temperature effect, concentration effect, compressibility, two structural water model

ABSTRACT: It has been pointed out by the author in a previous paper (Akusticheskiy Zhurn. 10, #2 (1964)) that the investigation of the dependence of compressibility of aqueous solutions on concentration alone is not sufficient for establishing the mechanism of the effect of ions on the structure of water. In the present work, measurements were made of the velocity of ultrasound in water solution of the salts NaCl, KCl, CsCl, KI, KBr, $NaNO_3$, Na_2SO_4, $Pb(NO_3)_2$, and $CaCl_2$ in the range of pressure between 0 and 300 atm. of temperature from 20 to 80 C,

Card 1/2

L 25360-65
ACCESSION NR: AP4046735

and of concentration from a fraction of 1 to 1.5-2 mole/kg. The sound velocity was measured by the optical diffraction method described in Vestnik LGU # 16 16(1956). The results are presented both in diagrams and tables. All measured values change linearly with pressure. The results support the two-structure model of water. Orig. art. has: 5 figures and 11 tables

ASSOCIATION: None

SUBMITTED: 10Oct63 ENCL: 00 SUB CODE: GC, GP

NR REF SOV: 006 OTHER: 002

Card 2/2

ACCESSION NR: AP4025734 S/0046/64/010/001/0098/0103

AUTHORS: Mikhaylov, I. G.; Shutilov, V. A.

TITLE: Absolute measurements of ultrasonic fields in solid bodies

SOURCE: Akusticheskiy zhurnal, v. 10, no. 1, 1964, 98-103

TOPIC TAGS: absolute ultrasonic field measurement, ultrasonic field, magneto-electric measurement, ultrasonic field parameter, reflecting boundary, nuclear acoustical resonance, paramagnetic acoustical resonance

ABSTRACT: The authors investigate the possibility of a magneto-electrical method of absolute measurement of the parameters of ultrasonic fields in solid bodies. The ultrasound receiver is a strip of metallic layer applied to the reflecting boundary of the sample. With oscillations of the strip in the magnetic field, emf induction is developed at its ends proportional to the amplitude of the oscillating strip in the incident ultrasonic wave. The authors estimate the sensitivity of the method. They study the effect of inhomogeneity in the amplitudes of perturbations of the face of a cylindrical sample, and they discuss the merits of the method and its possible uses. Orig. art. has: 4 figures and 9

Card 1/2

ACCESSION NR: AP4025734

formulas.

ASSOCIATION: Leningradskiy gosudarstvennyy universitet (Leningrad State University)

SUBMITTED: 16May63 DATE ACQ: 10Apr64 ENCL: 00

SUB CODE: PH NO REF SOV: 006 OTHER: 002

Card 2/2

MIKHAYLOV, I.G.; ROZINA, M.V.; SHUTILOV, V.A.

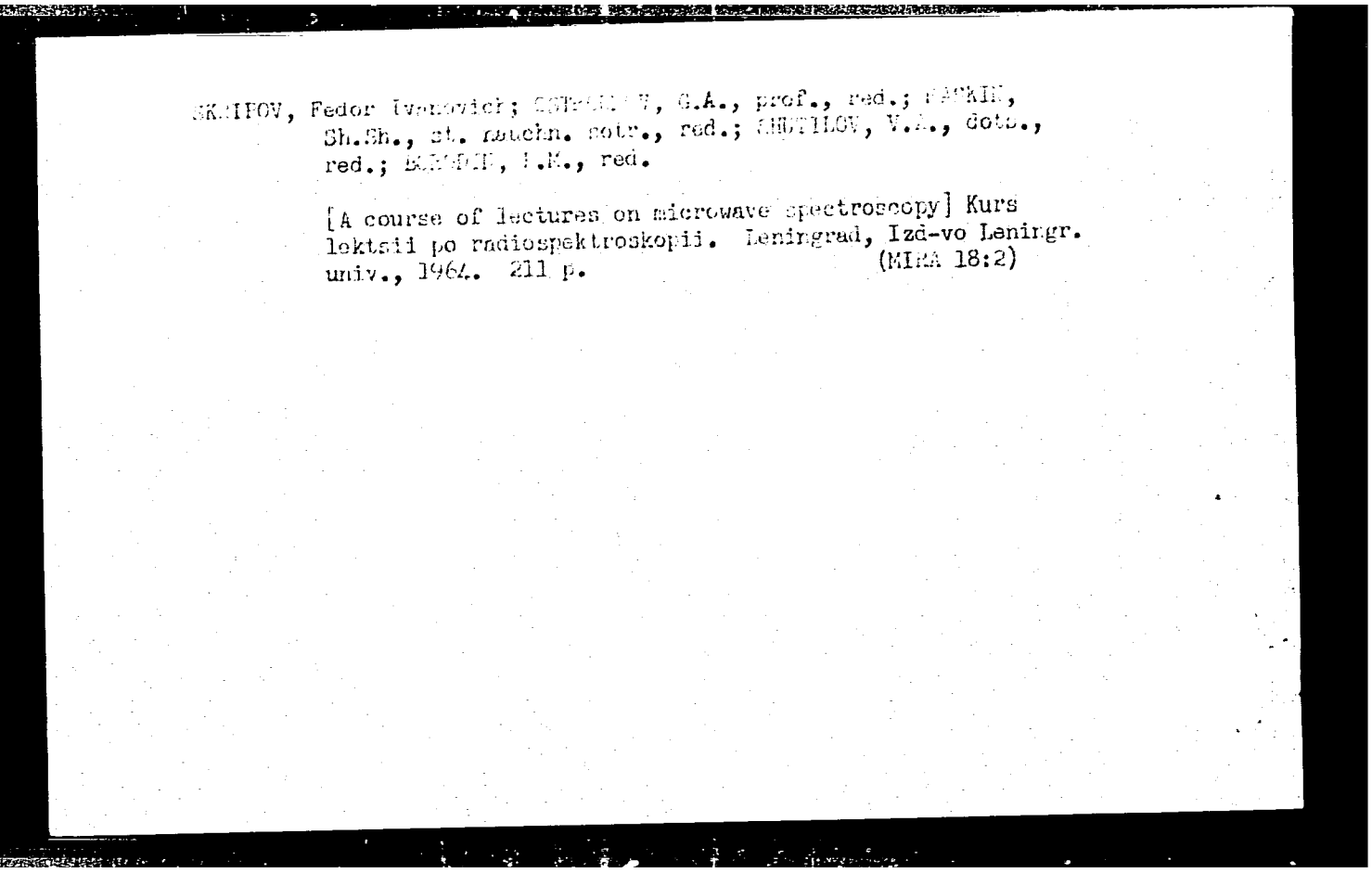
Sound velocity and the compressibility of solutions of salts of inorganic acids in formamide. Akust. zhur. 10 no.2:213-217 '64. (MIRA 17:6)

1. Leningradskiy gosudarstvennyy universitet.

MIKHAYLOV, I.G.; SHUTILOV, V.A.

Nonlinear acoustic properties of aqueous electrolyte solutions.
Akust.zhur. 10 no.4:450-455 '64. (MIRA 18:2)

1. Leningradskiy gosudarstvennyy universitet.



SKRIPOV, Fedor Ivanovich; [illegible], G.A., prof., red.; [illegible], Sh.Sh., st. nauchn. sotr., red.; [illegible], V.A., dots., red.; [illegible], I.K., red.

[A course of lectures on microwave spectroscopy] Kurs lektsii po radiospektroskopii. Leningrad, Izd-vo Leningr. univ., 1964. 211 p. (MIRA 18:2)

L 20699-66 E... (a)/ EF(n)-2/T/EWP(t)/ETC(m)-6 IJP(c) JD/WW/JG
ACC NR: AP6008005 SOURCE CODE: UR/0046/66/012/001/0131/0133

51
45
B

AUTHOR: Shutilov, V. A.

ORG: none

TITLE: All-Union Conference on new investigation trends in the fields of absorption, generation, amplification, and reception of ultrasonic and hypersonic oscillations in solid bodies, and the utilization of these effects in acoustics and radio engineering

SOURCE: Akusticheskiy zhurnal, v. 12, no. 1, 1966, 131-133

TOPIC TAGS: physics conference, laser conference, acoustic conference

ABSTRACT: The Conference, held in Moscow on June 22--23,1965, was organized by the Scientific Council on Ultrasound Physics, the Institute of Acoustics, and the Institute of Radioelectronics, all of the Academy of Sciences USSR. Almost 100 representatives of various institutions of higher education and scientific-research organizations from Moscow, Leningrad, Khar'kov, Kiev, Novosibirsk, and other cities of the Soviet Union participated. Thirty reports were presented. Some of the more important papers discussed the following subjects: theoretical and experimental investigations of nonlinear effects appearing during the amplification of ultrasound in piezoelectric semiconductors; the effect of spectral composition of preliminary illumination on the amplification of transverse waves in photosensitive CdS single crystals; characteristics of the amplification of transverse ultrasonic waves in CdS;

Card 1/3

L 20689-66
ACC NR: AP6008005

6

the relationship between the appearance of a "second sound" with an anomalously low propagationspeed during amplification of ultrasound by means of carrier drift; the possiblility of amplifying Rayleigh waves in a piezoelectric crystal through interaction of the waves with a beam of electrons passing in a slit inside the crystal; the theoretical investigation of the amplification of volume waves by means of a drifting flux of electrons in a laminated medium consisting of interchanging thin layers of piezoelectric dielectric with a high constant of electromechanical binding and of a semiconductor with a high electron mobility; the theory of the electro-acoustical effect in semiconductors with a deformation mechanism of electron-phonon interaction at high frequency and high intensity of ultrasound; the theory of the electro-acoustical effect when the capture of electrons in traps in piezoelectric semiconductors is taken into account; the experimental study of the electro-acoustical effect in CdS single crystals; utilization of the electro-acoustical effect for the investigation of ultrasonic converters; physical properties of semiconductors used for the amplification of ultrasound; the generation of ultrasound by a depleted layer in piezoelectric semiconductors; the piezoresistance effect on p-n transitions; the generation and amplification of ultrasound in the same crystal; the investigation of electroacoustic characteristics of converters based on depleted layers in low-resistance CdS crystals; preliminary results of the investigation of a converter with a barrier in a GaAs single crystal; the influence of hydrostatic pressure on the properties of the p-n transition in compounds of the $A^{III}B^{V}$ type; the operation of piezosensitive tunnel diodes in pressure detectors; the influence of mechanical stresses on the characteristics of tunnel diodes; the dependence of transistor

Card 2/3

L 20689-66
ACC NR: AP6008005

characteristics on the mechanical stresses; the effect of nonuniform stresses on electric characteristics of photodiodes; the investigation of the propagation of hypersound based on the dispersion of monochromatic laser emission; the amplification and generation of hypersound during stimulated light dispersion; the magnetic excitation of high-frequency elastic waves in crystals of yttrium garnet; electron-photon interaction proportional to the applied field, and amplification of sound in crystals; the absorption of the surface elastic wave and its interaction with plasma; and the investigation of lattice defects in $A^{III}B^{V}$ type crystals by means of ultrasound. [JA]

SUB CODE: 20/ SUBM DATE: none/ ATD PRESS: 4123

Card 3/3

L 36543-66 EWT(1)/T/EWP(k) IJP(c) WW/GG

ACC NR: AP6016832 (N) SOURCE CODE: UR/0046/66/012/002/0239/0246

AUTHOR: Shutilov, V. A.

ORG: Leningrad State University (Leningradskiy gosudarstvennyy universitet)

TITLE: Angles and character of deflection of a light beam in an ultrasonic field

SOURCE: Akusticheskiy zhurnal, v. 12, no. 2, 1966, 239-246

TOPIC TAGS: light modulation, optic scanning, light refraction, ultrasonic field, ultrasonic effect, refractive index

ABSTRACT: In view of recent interest in the realization of rapidly-alternating deflection of the light beam by refraction of light by ultrasound, the author estimates the following parameters of refraction of a narrow light beam in an ultrasonic field: the maximum angle of the deflection, its dependence on the time in the case of traveling and standing ultrasonic waves at different thicknesses of the ultrasonic cell, the angle of distortion of the light beam as a function of its width and of the thickness of the cell, the influence of inhomogeneities of the refractive-index gradient in the ultrasonic wave on the structure of the deflected beam, the character of time scanning of the beam, and other features of ultrasonic deflection. The estimates are based on the general theory of R. Lucas and P.

UDC: 534.231 + 535.3

Card 1/2

L 22897-66 EWT(l)/EWT(m)/T/EWP(t) IJP(c) JD/WW/GG
ACC NR: AP6006875 SOURCE CODE: UR/0181/66/008/002/0621/0623

AUTHOR: Gavrilov, V. S.; Shutilov, V. A.

ORG: Leningrad State University (Leningradskiy gosudarstvennyy universitet)

TITLE: Electron paramagnetic resonance in nonstoichiometric single-crystal ZnS

SOURCE: Fizika tverdogo tela, v. 8, no. 2, 1966, 621-623

TOPIC TAGS: zinc sulfide, single crystal, stoichiometry, crystal impurity, epr spectrum, hyperfine structure, photoconductivity

ABSTRACT: The authors investigated purified hexagonal single crystals of ZnS with different nonstoichiometric composition, grown in different laboratories and possessing different contents of random impurities (of the order of 10^{-4}--10^{-6}%). The investigations were made at 9,340 Mcs with different illumination and orientation of the electromagnetic field relative to the optical c-axis of the crystal. In the case of excess zinc, EPR spectra of identical structure were observed in all cases, exhibiting definite behavior when the crystal was illuminated with light of different wavelengths. The spectra consisted of a central line and six identical hfs components, separated by intervals ~67 oe, and isotropic relative to the orientation of the magnetic field at any temperature (295 and 77K) and any illumination.

Card 1/2

L 22897-66
ACC NR: AP6006875 O

At certain angles, additional six weak signals appeared, whose intensity relative to the hfs lines depended on the orientation of the field. The intensity of the entire spectrum, other conditions being equal, was proportional to the concentration of the excess zinc atom. The intensities of the hyperfine-structure lines and their satellites did not change upon illumination in any direction, but the intensity and the structure of the main signal was greatly dependent on the brightness and spectral composition of the illumination. Exposure to light containing the entire visible mercury spectrum, increases the central line by approximately 20 times, but reducing the spectral width of the light to 3300--4600 Å increased it by approximately 70 times above the dark signal. Other singularities of the wavelength behavior of the spectrum are briefly discussed. Similar effects were observed in photoconducting semiconductors in the case of EPR signals due to paramagnetic impurities. The phenomenon is explained by assuming that the lattice of the nonstoichiometric ZnS crystal contains Zn^+ ions which cause the observed resonance signals. The hyperfine structure is due to the electrons interacting with the donors. Illumination to light of 3300--4600 Å wavelength increases the concentration of the Zn^+ ions and strengthens the main EPR signal. All other singularities of the spectrum can likeqise be attributed to the influence of the excess Zn^+ ions. Orig. art. has: 1 figure.

SUB CODE: 20/ SUBM DATE: 30Sep65/ OTH REF: 002

Card 2/2 BLG

SHUTILOVA, A. A.

SHUTILOVA, A. A.: "Historoentgenological investigations of the bone structures of the knee joint." Min Health Ukrainian SSR. Khar'kov Medical Inst. Khar'kov, 1956. (Dissertation for the Degree of Candidate in Medical Science.)

Knizhnaya letopis', No. 30, 1956. Moscow.

BRYZHNEV, V.S.; SHUTILOVA, A.A.

Significance of the small-frame fluorographic method in examination of the osteoarticular system. Ortop., travm. i protez. 18 no.2: 32-35 Mr-Ap '57. (MIRA 10:8)

1. Iz Khar'kovskogo instituta meditsinskoy radiologii (dir. - dotsent Ye.A.Bazlov)
(BONES, radiography
fluorography, small-frame method)
(JOINTS, radiography
same)

SHUTILOVA, A.A.

A case of tracheal stenosis caused by Lymphogranulomatosis.
Vestn. rentgen. i radiol. 38 no.4:75-76 Jl-Ag'63
(MIRA 17:2)

1. Iz rentgenovskogo otdeleniya (zav. - dotsent Ya.F.Levin)
Khar'kovskogo instituta meditsinskoy radiologii.

SHUTKA, Ya. E.: Master Tech Sci (diss) -- "Investigation of the physico-mechanical and technological properties of wood pulp from the ash tree in the Latvian SSR". Riga, 1958. 26 pp (Latvian Agric Acad), 200 copies (KL, No 1, 1959, 121)

SHUTKEVICH, I.Ya., inzhener; AVDEYEV, Ye.A., inzhener.

Establishing rice fields and rice growing in Krasnodar Territory. Gidr.i mel. 5 no.12:3-11 D '53. (MLRA 6:11)
(Krasnodar Territory--Rice) (Rice--Krasnodar Territory)

[illegible] I.Ya., inzh. (Mozdok); SEYTKHALILOV, [illegible]

Manufacture of the blocks of prefabricated irrigation structures in reinforced concrete molds. Gidr. i mel. [illegible]
[illegible] (MIRA [illegible])

KHOKHLOV, S.F., kand.tekhn.nauk; ANNENKOV, V.A., kand.tekhn.nauk; SHUTKIN, G.A., inzh.

Studying the process of mass transfer in a scrubber having conically slotted plates. Khim. i neft. mashinostr. no.9:25-26 S '65. (MIRA 18:10)

SHUTKIN, G.I.

Deceased 1957

Hydraulic Eng.

See IIC

BORISOV, V.V.; DUBYANSKIY, M.A.; STOLBOV, V.S.; TUROV, A.A.; SHUTKIN, L.N.; YEGOROV, M.P., red.; KUROCHKIN, V.D., red.; BERDNIKOVA, N.D., red.-leksikograf; SAVIN, B.V., red.-leksikograf; KRUPENNIKOVA, I.A., red.-leksikograf; DANILOVA, Z.S., red.-leksikograf; BUKOVSKAYA, N.A., tekhn. red.

[Dictionary of foreign military abbreviations] Slovar' inostrannykh voennykh sokrashchenii. Pod red. M.P.Egorova. Moskva, Voen. izd-vo M-va oborony SSSR, 1961. 891 p. (MIRA 15:2)
(Abbreviations) (Military art and science--Dictionaries)

SHUTKIN, M.A.

Immobilizing swine. Veterinariia 33 no.8:33 Ag '56. (MLRA 9:9)

1.Starshiy veterinarnyy vrach Gzhel'skoy mashino-traktornoy stantsii, Ramenskogo rayona, Moskovskoy oblasti.
(Veterinary instruments and apparatus)

SHUTKIN,N.I., inzhener

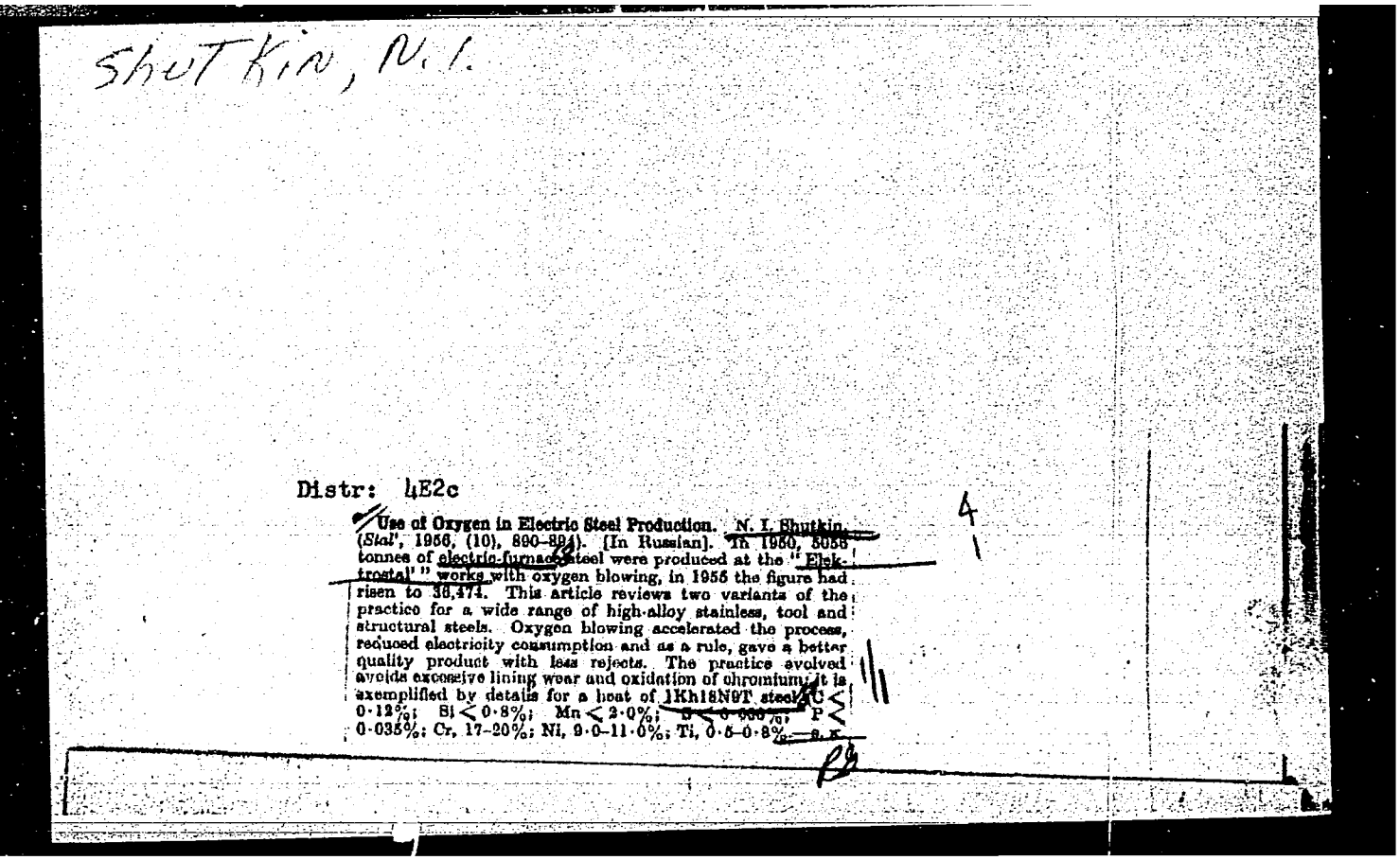
Bottom casting without pressing with a pause to fill the head.
Stal' 15 no.7:607-611 Jl '55. (MLRA 8:9)

1. Zavod "Elektrostal'"
(Steel--Metallurgy)

SHUTKIN, N.I.

Smelting stainless steel with an oxygen blast. Metallurg no.1:10-11 Ja '56. (MIRA 9:9)

1.Zamestitel' nachal'nika tekhotdela zavoda "Elektrostal'".
(Steel, Stainless--Electrometallurgy)



Shutkin, N. I.

Distr: 4E2c

Use of Oxygen in Electric Steel Production. N. I. Shutkin. (*Stal'*, 1956, (10), 890–894). [In Russian]. In 1950, 5058 tonnes of electric-furnace steel were produced at the "Elektrostal'" works with oxygen blowing, in 1955 the figure had risen to 38,474. This article reviews two variants of the practice for a wide range of high-alloy stainless, tool and structural steels. Oxygen blowing accelerated the process, reduced electricity consumption and as a rule, gave a better quality product with less rejects. The practice evolved avoids excessive lining wear and oxidation of chromium; it is exemplified by details for a heat of 1Kh18N9T steel. C < 0·12%; Si < 0·8%; Mn < 2·0%; S < 0·030%; P < 0·035%; Cr, 17–20%; Ni, 9·0–11·0%; Ti, 0·5–0·8%. — S. K.

DUBROV, N.F., kand. tekhn. nauk; MIKHAYLOV, O.A., kand. tekhn. nauk; FEL'DMAN, I.A.; DANILOV, A.M.; SOROKIN, P.Ya., kand. tekhn. nauk, starshiy nauchnyy sotrudnik; BUTAKOV, D.K., kand. tekhn. nauk, dots.; SOYFER, V.M.; LATASH, Yu.V., mladshiy nauchnyy sotrudnik; ZAMOTAYEV, S.P.; BEYTEL'MAN, A.I.; SAPKO, A.I.; PETUKHOV, G.K., kand. tekhn. nauk; YEDNERAL, F.P., kand. tekhn. nauk, dots.; LAPOTYSHKIN, N.M., kand. tekhn. nauk, starshiy nauchnyy sotrudnik; ROZIN, R.M.; NOVIK, L.M., kand. tekhn. nauk, starshiy nauchnyy sotrudnik; LAVRENT'YEV, B.A.; SHILYAYEV, B.A.; SHUTKIN, N.I.; GNUCHEV, S.A., kand. tekhn. nauk, starshiy nauchnyy sotrudnik; LYUDEMAN, K.F., doktor-inzh., prof.; GHUZIN, V.G., kand. tekhn. nauk; BARIN, S.Ya.; POLYAKOV, A.Yu., kand. tekhn. nauk; FEDCHENKO, A.I.; AGEYEV, P.Ya., prof., doktor; SAMARIN, A.M.; BOKSHITSKIY, Ya.M., kand. tekhn. nauk; GARNYK, G.A., kand. tekhn. nauk; MARKARYANTS, A.A., kand. tekhn. nauk; KRAMAROV, A.D., prof., doktor tekhn. nauk; TEDER, L.I.; DANILOV, P.M.

Discussions. Biul. TSNIICHM no.18/19:69-105 '57. (MIRA 11:4)

1. Direktor Ural'skogo instituta chernykh metallov (for Dubrov). 2. Direktor TSentral'nogo instituta informatsii chernoy metallurgii (for Mikhaylov). 3. Nachal'nik nauchno-issledovatel'skogo otdela osobogo konstruktorskogo byuro tresta "Elektropech'" (for Fel'dman). 4. Nachal'nik martenovskoy laboratorii Zlatoustovskogo metallurgicheskogo zavoda (for Danilov, A.M.). 5. Laboratoriya protsessov stalevareniya Instituta metallurgii Ural'skogo filiala AN SSSR (for Sorokin).

(Continued on next card)

DUBROV, N.F.---(continued) Card 2.
6. Ural'skiy politekhnicheskiy institut (for Butakov). 7. Starshiy inzhener Bryanskogo mashinostroitel'nogo zavoda (for Soyfer). 8. Institut elektrosvarki im. Patona AN URRS (for Latash). 9. Nachal'nik TSentral'noy zavodskoy laboratorii "Uralmashzavoda" (for Zamotayev). 10. Dnepropetrovskiy metallurgicheskiy institut (for Sapko). 11. Moskovskiy institut stali (for Yedneral). 12. TSentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii (for Gmuchev, Lapotyshkin). 13. Starshiy master Leningradskogo zavoda im. Kirova (for Rozin). 14. Institut metallurgii im. Baykova AN SSSR (for Novik, Polyakov, Garnyk). 15. Nachal'nik tekhnicheskogo otdela zavoda "Bol'shevik" (for Lavrent'yev). 16. Starshiy inzhener tekhnicheskogo otdela Glavspetsstali Ministerstva chernoy metallurgii (for Shilyayev). 17. Zamestitel' nachal'nika tekhnicheskogo otdela zavoda "Elektrostal'" (for Shutkin). 18. Freybergskaya gornaya akademiya, Germanskaya Demokraticheskaya Respublika (for Lyudeman). 19. Zaveduyushchiy laboratoriyey stal'nogo lit'ya TSentral'nogo nauchno-issledovatel'skogo instituta tekhnologii i mashinostroyeniya (for Gruzin). 20. Starshiy master elektrostaleplavil'nykh pechey Uralvagonzavoda (for Barin). 21. Zamestitel' nachal'nika elektrostaleplavil'nogo tsekha zavoda "Sibelektrostal'" (for Fedchenko). 22. Zaveduyushchiy kafedroy metallurgii stali i elektrometallurgii chernykh metallov Leningradskogo politekhnicheskogo instituta (for Ageyev). 23. Zamestitel' direktora Instituta metallurgii im. Baykova AN SSSR, chlen-korrespondent AN SSSR (for Samarin).

(Continued on next card)

DUBROV, N.F.---(continued) Card 3.
24. Nachal'nik laboratorii TSentral'nogo nauchno-issledovatel'skogo instituta chernoy metallurgii (for Bokshitskiy). 25. Zaveduyushchiy kafedroy elektrometallurgii Sibirskogo metallurgicheskogo instituta (for Kramarov). 26. Nachal'nik elektrostaleplavil'nogo tsekha Kuznetskogo metallurgicheskogo kombinata (for Tedor). 27. Nachal'nik elektrometallurgicheskoy laboratorii Kuznetskogo metallurgicheskogo kombinata (for Danilov, P.M.).
(Steel--Metallurgy)

SOV/137-58-12-24206

Translation from: Referativnyy zhurnal. Metallurgiya, 1958, Nr 12, p 41 (USSR)

AUTHOR: Shutkin, N I

TITLE: Melting Electric Steel With Oxygen (Primeneniye kisloroda pri vyplavke elektrostali)

PERIODICAL: Tyazh. prom-st' Podmoskov'ya (Mosk. obl. sovnarkhoz), 1958, Nr 3, pp 18-21

ABSTRACT: In melting P18 high-speed steel in 5-t electric furnaces at the Elektrostal' Plant, O_2 is employed to accelerate fusion of the charge. Blow starts an hour to an hour and ten min after the current is turned on. O_2 consumption is ~20 m^3/t ingots. After complete fusion, the slag is deoxidized by 30 kg 75% FeSi and 15 kg ground coke. The slag is poured off, and the heat is conducted thereafter in the usual way. Energy consumption is reduced by 150 kwh/t, oxidation loss of W is diminished from 6.4 to 3.8-4.2%, oxidation loss of Cr rises from 6.1 to 10.2%, oxidation loss of V rises from 8.7 to 9.9%. The cost of P18 steel drops by 400 rub/t thanks to the W saving (despite the rise in Cr and V oxidation loss). The reduced W-oxidation loss is explained by reduction in the time required for fusion, during which sublimation

Card 1/2

Melting Electric Steel With Oxygen (cont.) SOV/137-58-12-24206

of W oxides proceeds. In the melting of R9 steel, the efficiency of O_2 application is less, since [W] is lower and the reduction of oxidation loss is correspondingly lower. When stainless 1-4Kh13 steel is melted with O_2, heat time diminishes from 8 hrs 5 min to 5 hrs 5 min; energy consumption from 898 kwh/t to 497 kwh/t, the furnace output capacity rises by 37%; analogous results are obtained in the melting of OKh18N9 and 1Kh18N9T steels. The duration of individual heats was 3-3.5 hours. Rejection due to flaws is reduced The cost of 1Kh18N9T steel is reduced by 311 rub/t, the cost of O_2 being 70 kopecks/m^3.

V. B.

Card 2/2

13.3000

75575
SOV/130-59-10-7/20

AUTHORS: Shutkin, N. I., Goncharenko, M. S. (deceased)

TITLE: Melting of Titanium-Containing Stainless Steel Without the Application of Ferrotitanium

PERIODICAL: Metallurg, 1959, Nr 10, pp 12-14 (USSR)

ABSTRACT: Aluminothermic reduction of Ti from TiO_2 was tested at "Elektrostal'" Plant (zavod "Elektrostal'"). However, the high cost of TiO_2 makes a large-scale introduction of the process inexpedient. Direct alloying of acid resistant 1Kh18N9T-steel with ilmenite concentrate produced good results. Sequence of operation: (1) composition of charge from stainless and low-alloy steel as well as soft iron waste for metal with 12% Cr, 12.5% Ni, about 1% Si, and 0.35% C; (2) addition of gaseous oxygen to accelerate process by blowing through bath to bring about boiling and remove excess carbon; (3) slag deoxidation with 45% ferrosilicon; (4) furnace

Card 1/4

Melting of Titanium-Containing Stainless Steel Without the Application of Ferrotitanium

75575
SOV/130-59-10-7/20

addition of a given quantity of ferrochrome; (5) removal of slag after complete melting of ferrochrome and addition of aluminothermic copper; (6) addition of aluminothermic mixture is followed immediately by the introduction of a limestone-fluorspar mixture (2 : 1) in quantities of 17 kg/t ingot; (7) switching on current; (8) tapping within 7 to 10 minutes after addition is completed. Optimal composition of aluminothermic mixture is shown in Table 1. The substitution of ferrotitanium by ilmenite and decreased melting period cuts production cost. However, alloying techniques with ilmenite need further study. Titanium extraction from ilmenite varies between 50 and 45%, so that the extraction of titanium from the basic material is higher than in alloying with ferrotitanium. There are 3 tables.

Card 2/4

Melting of Titanium-Containing Stainless Steel Without the Application of Ferrotitanium

75575
SOV/130-59-10-7/20

TABLE 1

Materials	Quantity kg/t	Chemical Composition, %					
		SiO_2	CaO+MgO	MnO	Fe	TiO_2	other admixtures
Fired Ural ilmenite concentrate	38	1,53—3,03	—	0,44—1,87	34,35—33,80	41,6—43,05	—
Powdered iron ore "Sin'ka"	4	2,20	—	—	66,82	—	—
Ground limestone	4	1,02	93,0	—	—	—	1,8
		Al	Si	Cu	Fe	Zn	
Secondary aluminum powder	19	90,0—93,1	1,67—1,85	2,8—2,5	1,04—1,50	0,25—0,36	

Card 3/4

Melting of Titanium-Containing Stainless Steel Without the Application of Ferrotitanium

75575
SOV/129-59-10-7/20

TABLE 2

Composition of Metal, %

Nr of Melt	C	S	Mn	S	P	Cr	Ni	Ti	Cu
A-48393	0.09	0.56	1.12	0.012	0.028	18.28	10.47	0.34	0.32
A-48444	0.07	0.36	0.90	0.011	0.029	17.85	10.90	0.33	0.20
A-49054	0.08	0.44	0.85	0.016	0.026	17.50	10.60	0.42	0.20
A-49057	0.08	0.60	1.04	0.014	0.029	17.95	10.60	0.49	0.20

ASSOCIATION: Plant "Elektrostal'" (Zavod "Elektrostal'")

Card 4/4

GAVRILOV, E.I., kand. biolog. nauk; SHUTKIN, P.A.

Is the "sparrow" problem definitely solved? Zashch. rast. ot vred. i bol. 9 no.9:7-8 '64. (MIRA 17:11)

1. Kazakhskiy institut zashchity rasteniy i Dzhambulskaya stantsiya zashchity rasteniy.

L 22526-65 EWT(d)/T/EED-2/EWP(1) Pg-4/Pk-4/Po-4/Pq-4, IJP(c) GO/BB

ACCESSION NR: AP5000883 S/0315/64/000/008/0030/0033

AUTHOR: Shutko, A.M. B

TITLE: Preliminary treatment of characters during their recognition by an automatic reader

SOURCE: Nauchno-tekhnicheskaya informatsiya, no. 8, 1964, 30-33

TOPIC TAGS: automatic pattern recognition, character recognition, video signal analysis

ABSTRACT: A technique for the preliminary treatment of characters is described which is based on the determination of the most probable value of the contrast function in certain regions of the character (the preparation element). The dimensions of the preparation element are then determined, and a system of preparation based on this principle is discussed. The system is intended for use with the automatic character reader being developed at the Odesskiy elektrotekhnicheskiy institut svyazi (Odessa Electrotechnical Institute of Communications). The preparation system is shown schematically and discussed in detail. Orig. art. has: 5 figures and 9 formulas.

ASSOCIATION: none

Card 1/2

L 22526-65

ACCESSION NR: AP5000883

SUBMITTED: 29Apr64 ENCL: 00 SUB CODE: DP

NO REF SOV: 002 OTHER: 003

Card 2/2

SHUTKO, A N

69

PHASE I BOOK EXPLOITATION SOV/5435

Kiselev, P. N., Professor, G. A. Gusterin, and A. I. Strashinin, Eds.

Voprosy radiobiologii. t. III: Sbornik trudov, posvyashchennyy 60-letiyu so dnya rozhdeniya Professora M. N. Pobedinskogo (Problems in Radiation Biology. v. 3: A Collection of Works Dedicated to the Sixtieth Birthday of Professor M[ikhail] N[ikolayevich] Pobedinskiy [Doctor of Medicine]) Leningrad. Tsentr. n-issl. in-t med. radiologii M-va zdravookhrananiya SSSR, 1960. 422 p. 1,500 copies printed.

Tech. Ed.: P. S. Peleshuk.

PURPOSE: This collection of articles is intended for radiobiologists.

COVERAGE: The book contains 49 articles dealing with pathogenesis, prophylaxis, and therapy of radiation diseases. Individual articles describe investigations of the biological effects of radiation carried out by workers of the Central Scientific Research Institute for Medical Radiology of the Ministry of Public Health, USSR. [Tsentral'nyy nauchno-issledovatel'skiy institut meditsinskoy radiologii Ministerstva zdravookhraneniya SSSR] during 1958-59. The following

Card 1/10

Ft 64

Problems in Radiation Biology (Cont.) SOV/5435

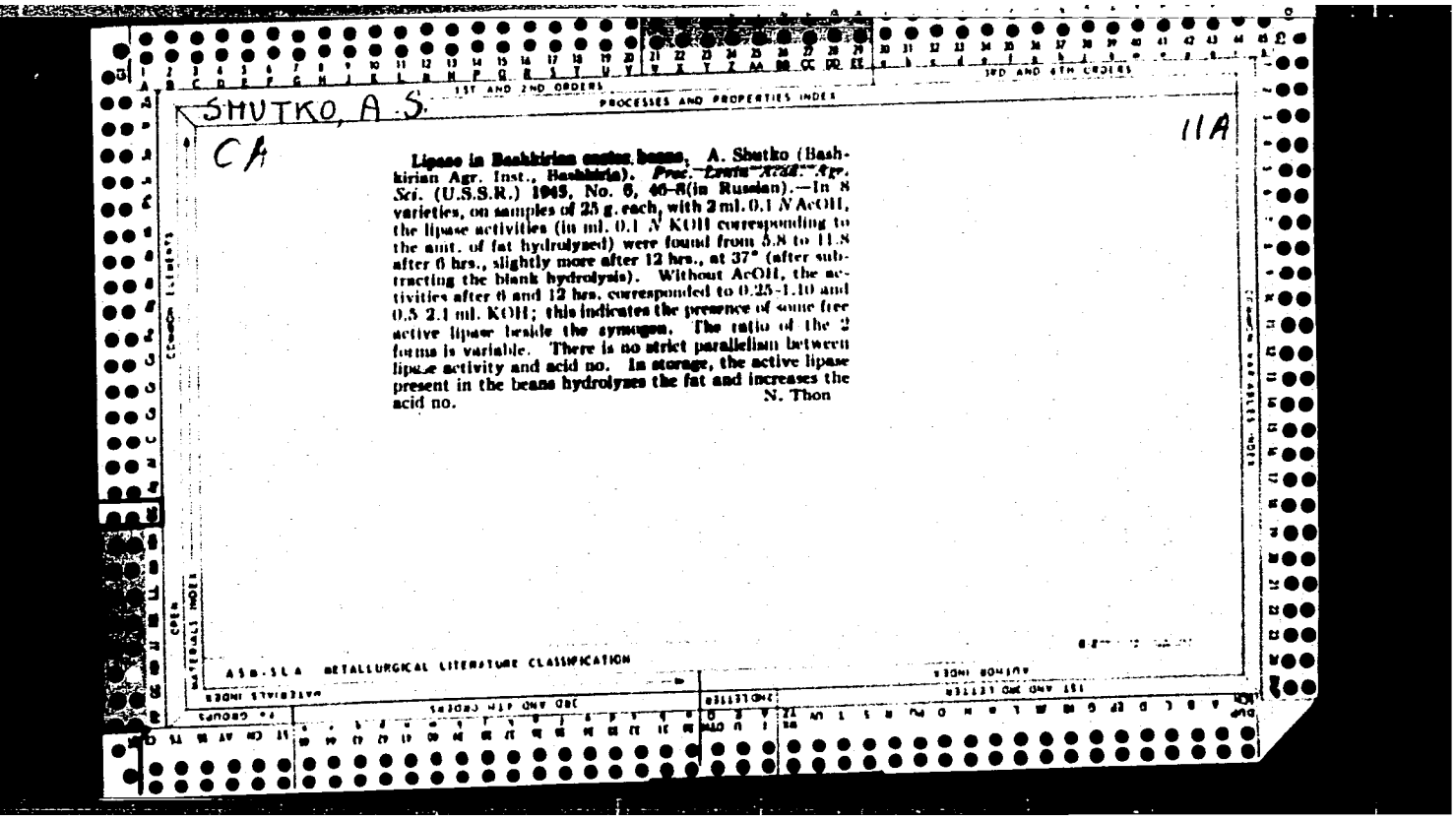
topics are covered: various aspects of primary effects of radiation; the course of some metabolic processes in animals subjected to ionizing radiation; reactions in irradiated organisms; morphologic changes in radiation disease; and reparation and regeneration of tissues injured by irradiation. Some articles give attention to the effectiveness of experimental medical treatments. No personalities are mentioned. References accompany almost all of the articles.

TABLE OF CONTENTS:

Card 2/10

Problems in Radiation Biology (Cont.) SOV/5435

Card 4/10



SHUTKO, A. S.

CA

11A

Lipase in Bashkirian castor beans. A. Shutko (Bashkirian Agr. Inst., Bashkiria). *Proc. Trans. Acad. Agr. Sci.* (U.S.S.R.) **1949**, No. 6, 46–8(in Russian).—In 8 varieties, on samples of 25 g. each, with 2 ml. 0.1 *N* AcOH, the lipase activities (in ml. 0.1 *N* KOH corresponding to the amt. of fat hydrolyzed) were found from 5.8 to 11.8 after 6 hrs., slightly more after 12 hrs., at 37° (after subtracting the blank hydrolysis). Without AcOH, the activities after 6 and 12 hrs. corresponded to 0.25–1.10 and 0.5–2.1 ml. KOH; this indicates the presence of some free active lipase beside the zymogen. The ratio of the 2 forms is variable. There is no strict parallelism between lipase activity and acid no. In storage, the active lipase present in the beans hydrolyzes the fat and increases the acid no.

N. Thon

M

Country : USSR
Category: Cultivated Plants. Commercial. Oil-Bearing. Sugar-Bearing.

Abs Jour: RZhBiol., No 11, 1958, No 49054

Author : Shutko, A.S.
Inst : Bashkir Agric. Inst.
Title : Pinching Castors Oil Plants in the Bashkir Autonomous SSR.

Orig Pub: Tr. Bashkirsk. s.-kh in-ta, 1956, 7, 80-98

Abstract: Under Bashkir conditions, only 2-3 bunches of the first series ripen in the short period without frost. It has been found in field tests which were carried out in 1937-1940 and 1943-1946 in the Uchkhoz (Training Farm) of the Agricultural Institute of Bashkiria (in the City of Ufa) that one may diminish

Card : 1/3

M-129

M

Country : USSR
Category: Cultivated Plants. Commercial. Oil-Bearing. Sugar-Bearing.

Abs Jour: RZhBiol., No 11, 1958, No 49054

the growth of vegetative parts by grafting the second series side branches and, hereby, increase the seed production of castor oil plants. Pinching speeds up the period of development and ripening of the clusters, reducing the vegetal period by several days. Also increased are the height of the plant, the number of ripe boils and the total absolute weight of the seeds. The oil content in the seeds is not changed by the pinching. It has been found, in particular, that pinching has a constant influence on the productivity of the second series branches, while the

Card : 2/3

Category: Cultivated Plants. Commercial. Oil-Bearing. Sugar-Bearing.

Abs Jour: RZhBiol., No 11, 1958, No 49054

effect on the productivity of the central clusters depends more on meteorological conditions. -- D.B. Vakhmistrov

Card : 3/3

COUNTRY : [illegible]
CATEGORY : Cultivated Plants. Commercial. Oleiferous. Sugar-Bearing. M

ABS. JOUR. : RZhBiol., No. 1, 1959, No. 1755

AUTHOR : [illegible], A.[illegible]
INST. : Bashkir Agricultural Institute
TITLE : Economically-biological Characteristics of the Bashkir-skaya III-SKhI Sugar Beet Variety.

ORIG. PUB. : Tr. Bashkirsk. s.-kh. in-ta, 19[illegible], 8, No.[illegible], 1?7-140

ABSTRACT : Comparative testing of several years' standing performed by the Bashkir agricultural institute of Bashkirskaya III-SKhI sugar beet variety and regional in the Bashkir Autonomous Socialist Soviet Republic of the [illegible]-632 variety (standard), selected by the [illegible] station both in the first (1955-1956) and in the second (1954-1956) year of beet life, differences in vegetation phases of the varieties could not be shown. According to productivity, the Bashkirskaya III-SKhI variety during all the years of testing surpassed the standard variety.

CARD: 1/1

[illegible] : [illegible]

[illegible] : [illegible], No. 1, 1959, [illegible]

ABSTRACT : On the average for the years of testing, this [illegible] as [illegible] [illegible] by the [illegible] crop 5.2, [illegible] of root-bearing plants 11.2, seeds 8.4, [illegible] [illegible], [illegible] weight of [illegible] 10.5 and [illegible] 7.51. The [illegible] was somewhat less than in the standard variety. The [illegible] [illegible] were somewhat higher in the standard but had a smaller amount of stalks. The number of [illegible] in the main [illegible] is greater than in the standard variety. Meteorological and soil conditions, testing methods and applied agricultural techniques are presented.
-- [illegible]

CARD: 2/2

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001550310013-2"

FD-3260

USSR/Nuclear Physics - Thermal neutron capture

Card 1/1 Pub. 146 - 19/44

Author : Shut'ko, A. V.; Zaretskiy, D. F.

Title : Capture of thermal neutrons by lead isotopes

Periodical : Zhur. eksp. i teor. fiz., 29, No 6(12), Dec 1955, 867-868

Abstract : The authors consider the isotopes Pb-207 and Pb-208 and their excitation levels, spins, parities, energies, etc. They compare the theoretical evaluations of cross-section of thermal neutron capture by lead isotopes with data of experiments. They conclude that capture in Pb-206 is "less single-particle" than in the case of Pb-207, and that the anomalous character of capture radiation in lead isotopes is explained by proceeding from the single-particle picture of capture. The authors thank Professor A. S. Davydov and V. F. Turchin for comments. Seven references, including one USSR: L. K. Peker and L. A. Sliv, Izv. AN SSSR, ser. fiz., 17, 1953.

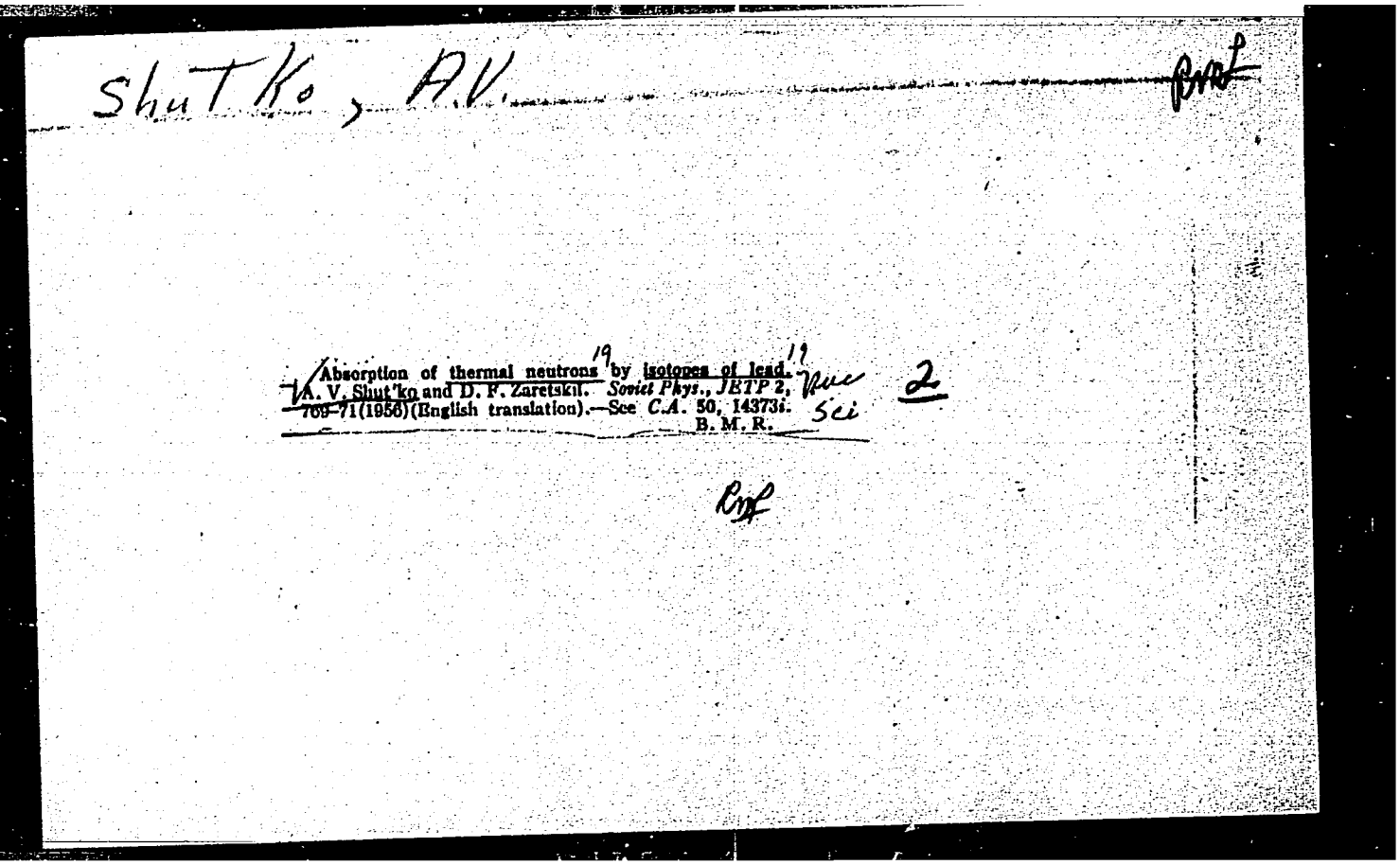
Institution : --

Submitted : August 31, 1955

SHUTKO, A. V. and ZARETSKIY, D. F.

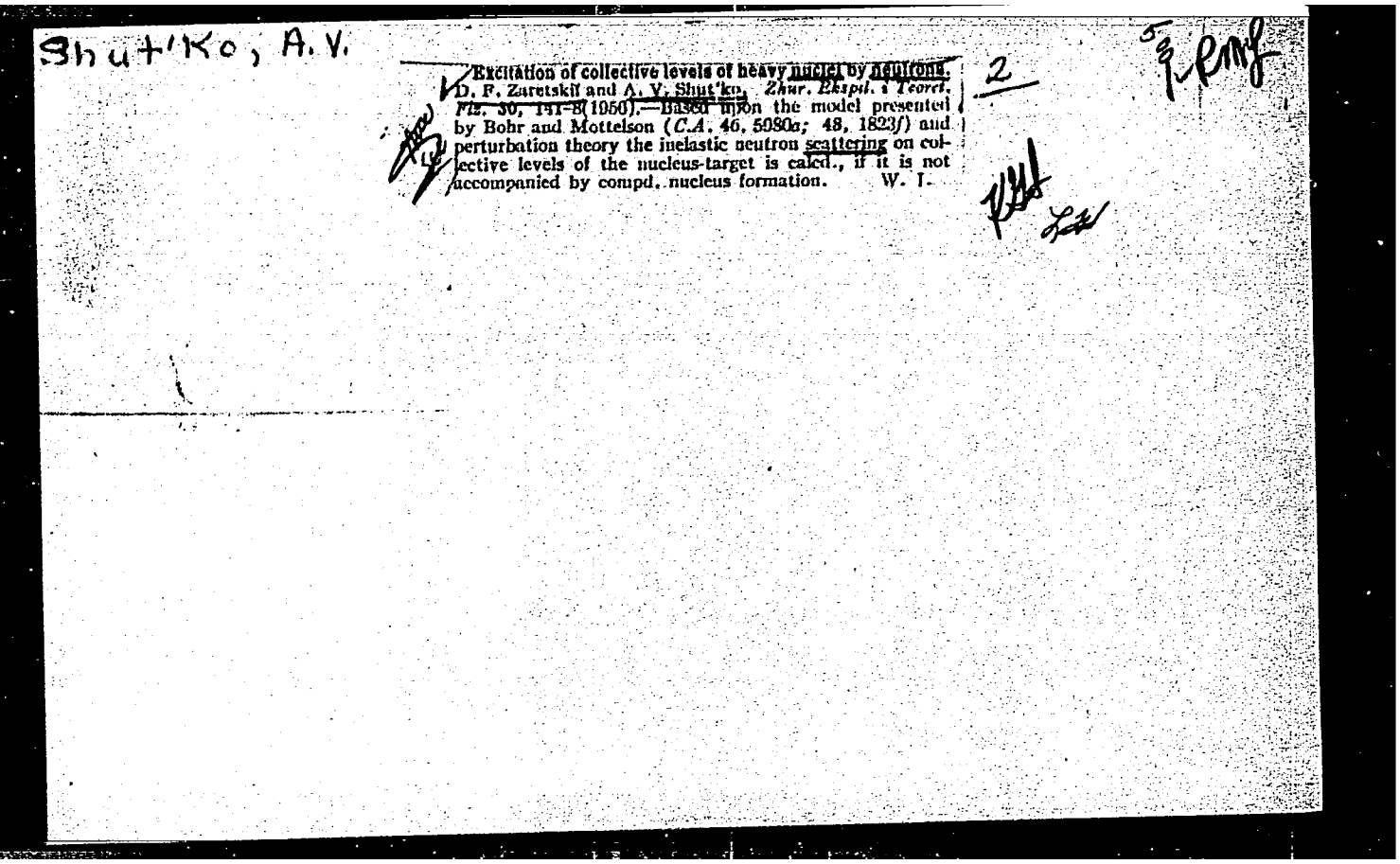
"On the Thermal Capture by Pb Isotopes" a paper presented at the International Conference on Nuclear Reactions, Amsterdam, 2-7 July 1956.

D551274



Shut'ko, A.V.

Absorption of thermal neutrons by isotopes of lead. A. V. Shut'ko and D. F. Zaretskii. *Soviet Phys., JETP* 2, 769–71(1956)(English translation).—See *C.A.* 50, 14373i.
B. M. R.



Shut'ko, A. V.

Excitation of collective levels of heavy nuclei by neutrons. D. F. Zaretskiĭ and A. V. Shut'ko. *Zhur. Eksptl. i Teoret. Fiz.* 30, 141–8(1956).—Based upon the model presented by Bohr and Mottelson (*C.A.* 46, 5080*a*; 48, 1823*f*) and perturbation theory the inelastic neutron scattering on collective levels of the nucleus-target is calcd., if it is not accompanied by compd. nucleus formation. W. I.

2

Shutko, A.V.

PA - 2690

AUTHOR ZARETSKIY, D.F., SHUTKO, A.V.

TITLE On the Quasi-Magnetical Interaction of the Nucleon Spin With the Rotation of the Nucleus.
(O kvazimagnitom vzaimodeystvii spina nuklona s vrashcheniyem yadra- Russian)

PERIODICAL Zhurnal Eksperim. i Teoret. Fiziki, 1957, Vol 32, Nr 2, pp 370-371, (U.S.S.R.)

Received 5/1957 Reviewed 6/1957

ABSTRACT It is possible to find a new interpretation for the rotational levels of nuclei with spin 1/2 if we start out from the following premises: (1) In These nuclei there exist Σ-states. Then in first approximation the levels with the total angular momentum I=K±1/2 are degenerated. (Here K stands for the rotational quantum number). (2) This degeneration is eliminated if we introduce into the Hamiltonian by Bohr and Mottelson an interaction of the form of $H_{Rs} = -(\lambda/mc^2)\,\vec{s}\,[\nabla U\,\vec{v}_{koll}]$ Here λ stands for a non-dimensional phenomenological constant with the same significance and magnitude as in the normal (usual) spin-orbit coupling of the nucleus. Furthermore the following denotations are used: $\vec{s}$ for the vector of the nucleon spin. $U(\vec{r})$ for the selfconsisting potential of the nucleus, mc^2 for the rest energy of the nucleon, and v_{koll} for the velocity with which the nucleon participates in the collective motion. First of all the significance of v_{koll} is clarified, and then the significance and the origin of the above-mentioned interaction H_{Rs}. For the wave function we set

Card 1/2

On the Quasi-Magnetical Interaction of the Nucleon Spin With the Rotation of the Nucleus. PA - 2690

with the corresponding accuracy $\Psi = \Psi_0 \exp\left\{ i\, w_x \Psi_1 / \Psi_0 \right\}$ and then the Schroedinger equation obtains in the new representation the following form: $H_{tr}\Psi_0 = E\Psi_0$, $H_{tr} = \exp(-i\omega_x \Psi_1/\Psi_0)\, H \exp(i\omega_x \Psi_1/\Psi_0)$, $H = H_0 + H'$. The nuclear spin-orbit interaction contained in H_0 then has the form $H_{ls} = -(\lambda/m^2c^2)[\Delta U \vec{s}]\,\vec{p}$, with $\vec{p}$ denoting the momentum of the nucleon. In H_{tr} we have, in addition to the interaction H_{ls}, also the additional interaction $H_{Rs} = -(i\lambda/m^2c^2)\,[\vec{s}VU]\,\vec{p}\,(\Psi_1/\Psi_0)$. By means of the defintion for the collective velocity it is possible to reduce the latter interaction to the first form. The paper under review then gives some remarks on the character of the $^2\Sigma$-states in the nucleus. A chart contains the results of the analysis of the rotational spectra of several nuclei with spin 1/2. The initially given interaction plays a role also in the coupling scheme devised by Bohr and Mottelson. (1 Chart).

ASSOCIATION
PRESENTED BY
SUBMITTED 31.8. 1956
AVAILABLE Library of Congress
Card 2/2

Shutko, A.V.

539.172.4

5396. EXCITATION OF COLLECTIVE LEVELS OF HEAVY NUCLEI BY NEUTRONS. D.F.Zaretskiĭ and A.V.Shut'ko. Zh. éksper. teor. Fiz., Vol. 30, No. 1, 141-8 (1956). In Russian.

Inelastic neutron scattering on target nucleus collective levels not accompanied by compound nucleus formation is calculated by perturbation theory methods in accordance with the Bohr and Mottelson model representation. A.